

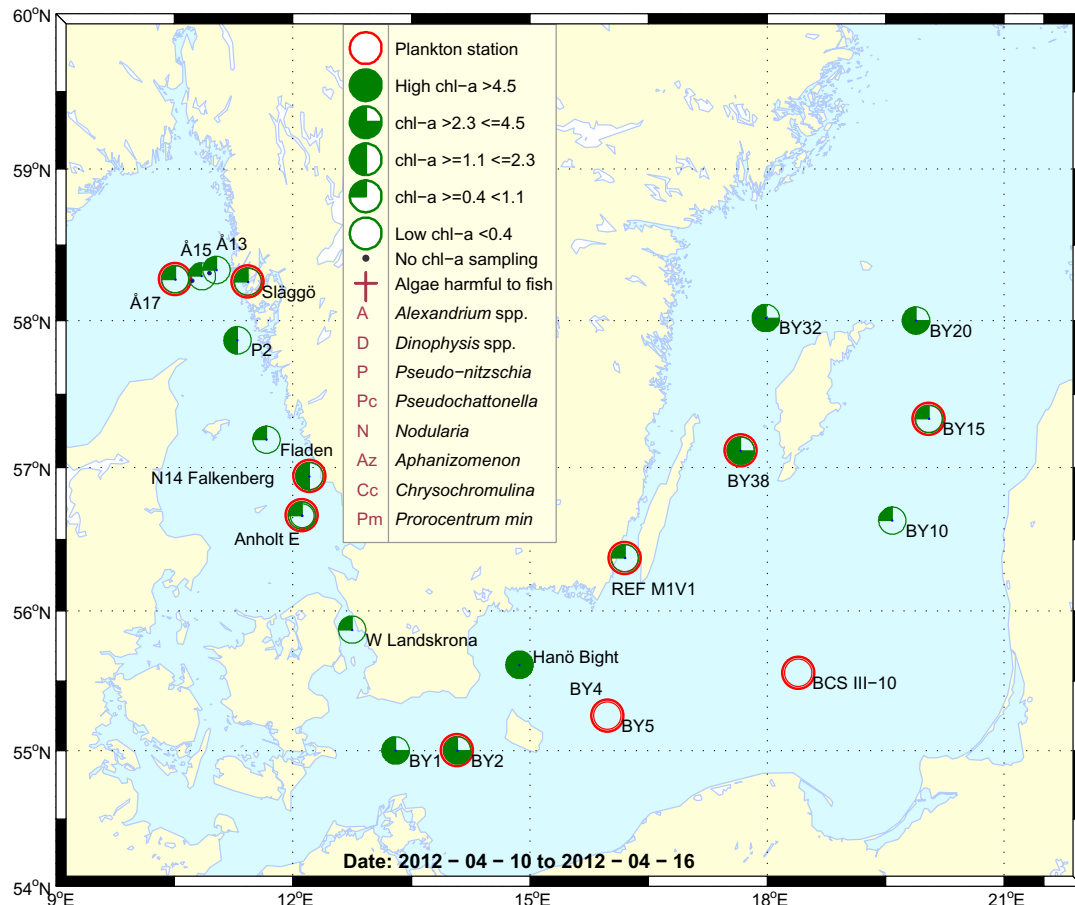
## Sammanfattning

Växtplanktonläget var väldigt lugnt i Västerhavet. Bara ett fåtal arter i låga cellantal observerades och talrikast var små arter av cryptomonader.

De integrerade (0-20m) klorofyllhalterna var inom det normala för månaden i Skagerrak och något under det normala i Kattegatt.

I södra Östersjön var en kiselalgsblomning på upphällning med dominans av *Skeletonema marinoi*. Vid övriga stationer dominerade små arter som cryptomonader, kolonibildande cyanobakterier och oidentifierade dinoflagellater proverna.

De integrerade (0-20m) klorofyllhalterna var över det normala vid BY2, under det normala vid BY10 och BY15 och inom det normala för denna månad vid alla andra Östesjöstationer.



## Abstract

The phytoplankton diversity was very low in the Skagerrak and the Kattegat and cryptomonads were the most numerous.

The integrated (0-20m) chlorophyll *a* concentrations were within normal in the Skagerrak and slightly below normal in the Kattegat.

In the Southern Baltic a declining diatom bloom was observed with *Skeletonema marinoi* dominating. In the remaining areas small species like cryptomonads, colony forming cyanobacteria and unidentified dinoflagellates dominated.

The integrated (0-20m) chlorophyll *a* concentrations were above normal at BY2, below normal at BY10 and BY15 and within normal at all other Baltic stations.

More detailed information on species composition and abundance

## The Skagerrak

### Släggö (Skagerrak coast) 10<sup>th</sup> of April

The phytoplankton diversity was rather low. Traces from the spring bloom were few and the diatom *Skeletonema marinoi* was found with low cell numbers. Small species were the most abundant, like cryptomonads and the dinoflagellate *Heterocapsa rotundata*. The mixotrophic ciliate *Laboea strobila* was observed.

### Å17 (open Skagerrak) 11<sup>th</sup> of April

The phytoplankton situation was very similar to the one at Släggö, except that the diatom *S. marinoi* was more abundant at Å17.

The integrated (0-20m) chlorophyll *a* concentrations were within normal for this month in the Skagerrak area.



The mixotrophic ciliate *Laboea strobila* was observed at Släggö.

## The Kattegat

### N14 Falkenberg 11<sup>th</sup> of April and Anholt E 11<sup>th</sup> and 16<sup>th</sup> of April

The total cell counts and species numbers were low and small species, e.g. cryptomonads, were the most abundant. At the second visit at Anholt E, the diversity was even lower than at the first.

The integrated (0-20m) chlorophyll *a* concentrations were below normal for this month in the Kattegat area.

## The Baltic Sea

### BY2 Arkona Deep 12<sup>th</sup> of April

The diatom *Skeletonema marinoi* was blooming and the diatom genera *Chaetoceros* and *Thalassiosira* were common. The dinoflagellate *Peridiniella danica* was common. *P. danica* is heterotrophic and often blooms in the end of or after diatom blooms.

The integrated (0-20m) chlorophyll *a* concentration was above normal for this month at BY2.

### Ref M1V1 Kalmar Sound 12<sup>th</sup> of April

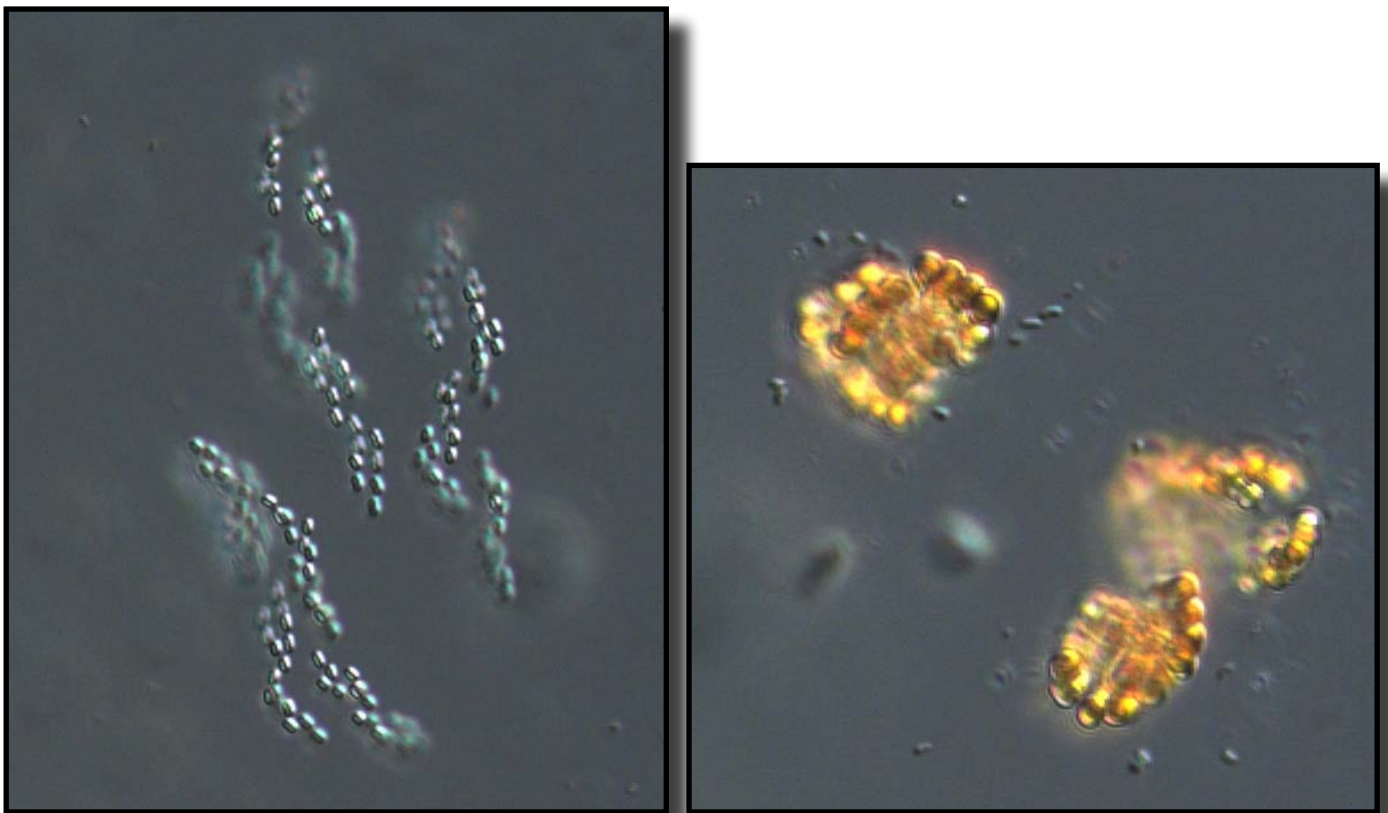
*S. marinoi* was very common, but clearly declining in numbers compared to the previous expedition. The euglenophyte *Eutreptiella gymnastica*, cryptomonads and small dinoflagellates were common. The colony forming cyanobacterium *Woronichinia* sp. was common.

### BY15 Gotland Deep and BY38 Karlsö Deep 13<sup>th</sup> of April

Small species were the most common, e.g. cryptomonads and colony forming cyanobacteria. A few species of diatoms were present with low cell numbers. Unidentified dinoflagellates were more abundant even though their cell numbers were quite low also.

### BY9 14<sup>th</sup> of April

Due to the lack of permits for sampling at BY5 and BCS III-10, BY9 was sampled. It is located between BCS III-10 and BY10. The diatom *Skeletonema marinoi* dominated the sample and cryptomonads were very common.

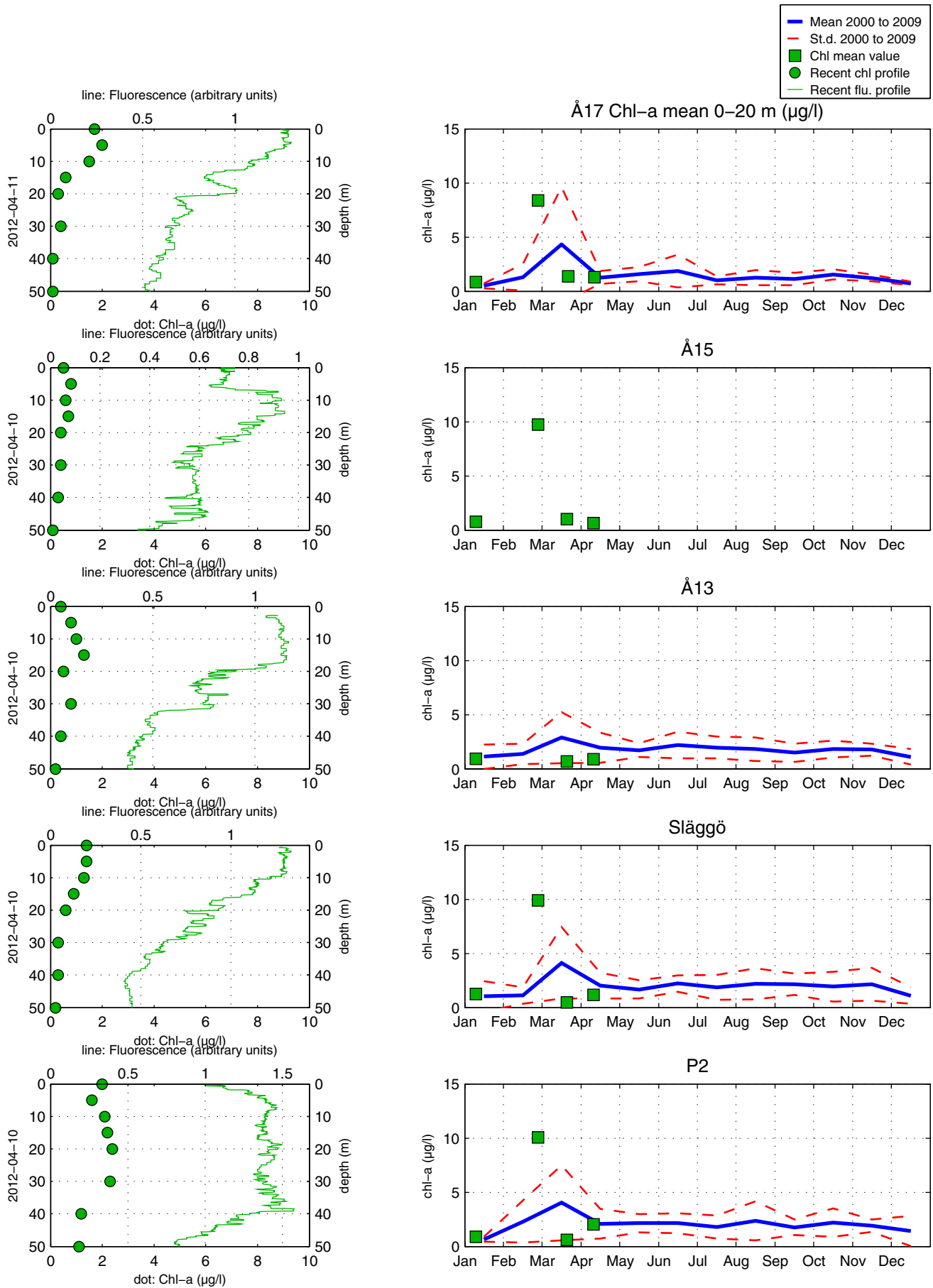


The colony forming cyanobacteria *Aphanothece* sp. (left) was observed at BY2 and *Woronichinia* sp. at Ref M1V1.

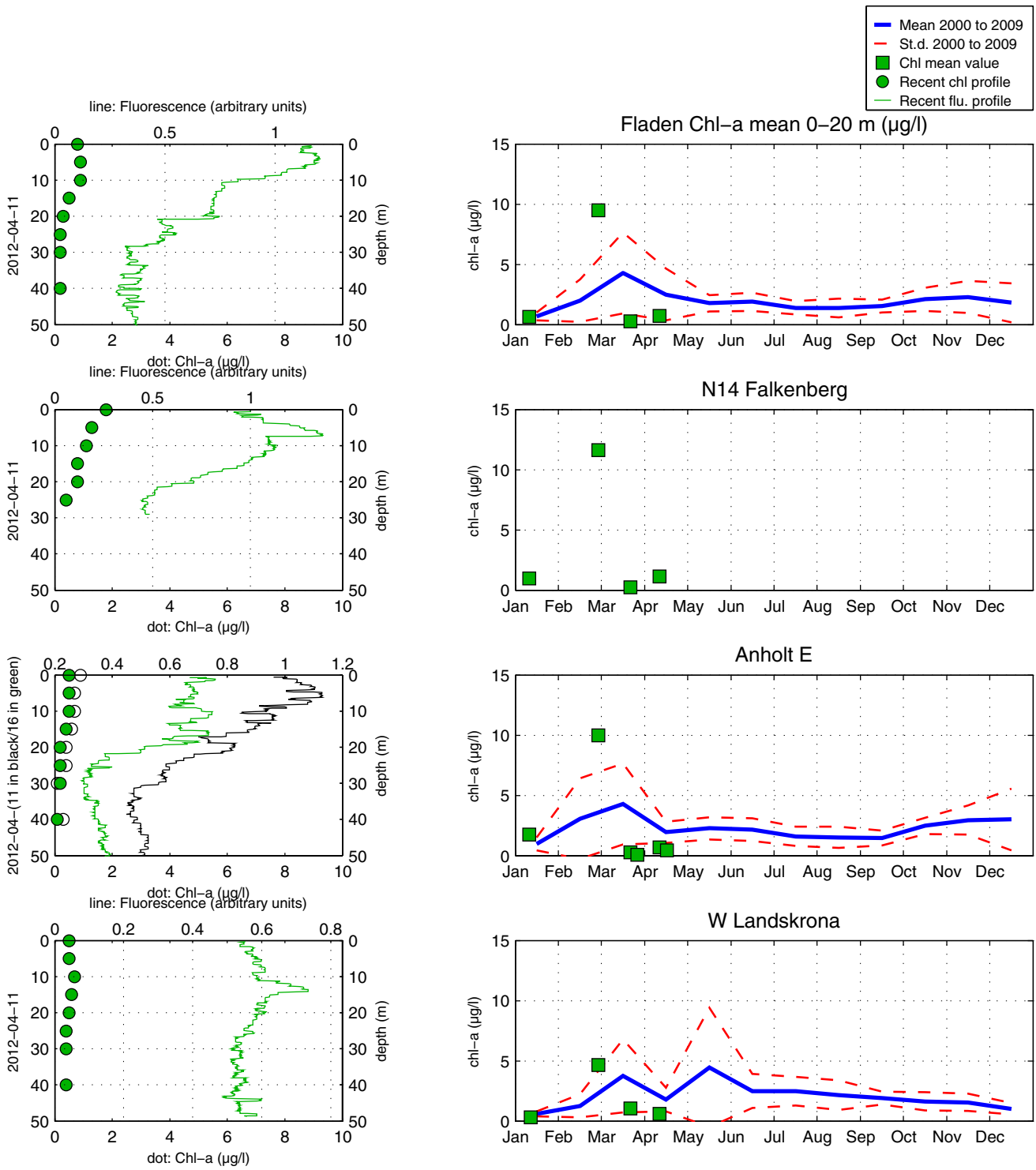
Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	11/4	10/4	11/4	11/4	16/4
	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Achnanthes</i> spp.					present
<i>Thalassionema nitzschioides</i>			present	present	
Centrales spp.			present		
<i>Chaetoceros</i> spp.		present			
<i>Skeletonema marinoi</i>	common	present			
<i>Ceratium lineatum</i>		present			
<i>Ceratium longipes</i>				present	present
<i>Ceratium tripos</i>	present		present	present	
<i>Dinophysis acuminata</i>			present		
<i>Dinophysis norvegica</i>			present		
Gymnodiniales spp.	present	present	present	present	common
<i>Gyrodinium spirale</i>				present	
<i>Heterocapsa</i> spp.	common	common	common	common	common
<i>Heterocapsa rotundata</i>	common	common	very common	common	common
<i>Katodinium glaucum</i>	present			present	
Peridinales spp.	present	present	present	present	present
<i>Protoperidinium</i> spp.		present			
<i>Protoperidinium bipes</i>					
<i>Scrippsiella</i> -complex		present	present		
Cryptomonadales spp.	common	very common	very common	very common	common
<i>Teleaulax</i> spp.	common	very common	common	very common	common
<i>Eutreptiella</i> spp.					
<i>Eutreptiella braarudii</i>	present	present		present	
Prymnesiales spp.		present			
<i>Pyramimonas</i> spp.	common	very common	present		present
cf. <i>Botryococcus braunii</i>		present			
<i>Apedinella spinifera</i>	present	present	present		
cf. <i>Kathablepharis remigera</i>		common	common	common	common
<i>Ebria tripartita</i>					
<i>Choanoflagellidea</i> spp.	present	common	present	common	
<i>Laboea strobila</i>		present			
<i>Mesodinium rubrum</i>	present	present	present	present	
<i>Strombidium</i> spp.		present			
Ciliophora spp.	present	present	present	present	present

Selection of observed species	BY2	BY 9 W	BY15	BY 38	REF M1-V1
Red=potentially toxic species	12/4	14/4	13/4	13/4	12/4
	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Achnanthes taeniata</i>	present				
Pennales spp.		present			present
<i>Thalassiosira</i> spp.	present		present		
<i>Attheya septentrionalis</i>	present				
Centrales spp.		present			present
<i>Chaetoceros</i> spp.	present	common	present	present	present
<i>Skeletonema marinoi</i>	very common	very common		present	very common
<i>Dinophysis acuminata</i>	present			present	
<i>Dinophysis norvegica</i>	present		present	present	
Gymnodiniales spp.	common	common	present	present	present
<i>Gyrodinium flagellare</i>					present
<i>Gyrodinium spirale</i>				present	
<i>Heterocapsa</i> spp.		present	present	present	common
<i>Heterocapsa rotundata</i>	present		present	present	common
<i>Katodinium glaucum</i>	present		present	present	
Peridinales spp.	very common	present	present	common	present
<i>Peridiniella catenata</i>	present		present		present
<i>Peridiniella danica</i>	present			present	
<i>Protoberidinium</i> spp.		present		present	present
<i>Protoberidinium bipes</i>					present
<i>Cryptomonadales</i> spp.	present	common	common	common	present
<i>Teleaulax</i> spp.	present	common	present	present	present
<i>Aphanizomenon</i> spp.	present			present	
Cyanobacteria spp colony			present		
<i>Woronichinia</i> spp.			present		common
<i>Eutreptiella</i> spp.		present	present		
<i>Eutreptiella gymnastica</i>	present			present	present
cf. <i>Chrysochromulina</i> spp.				present	
<i>Pyramimonas</i> spp.	present		present	present	present
cf. <i>Botryococcus braunii</i>			present		
cf. <i>Kathablepharis remigera</i>					
<i>Ebria tripartita</i>			present		
<i>Choanoflagellidea</i> spp.	present	present	present	present	present
<i>Mesodinium rubrum</i>	present	present	present	present	
<i>Strombidium</i> spp.					
Ciliophora spp.	present	present	present	present	present

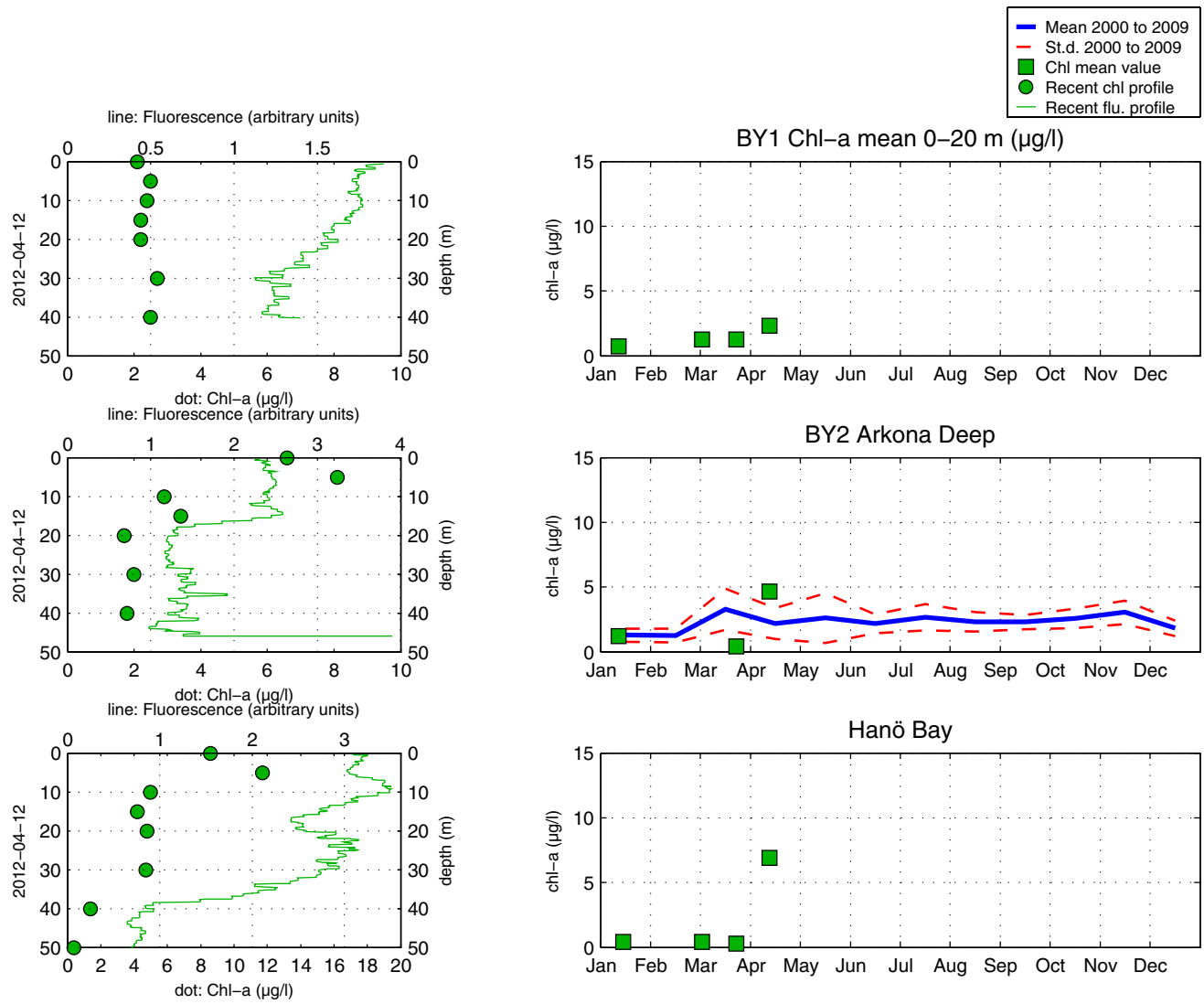
# The Skagerrak



# The Kattegat and the Sound

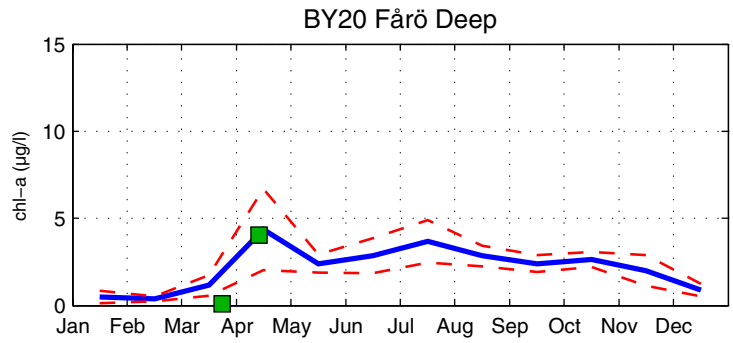
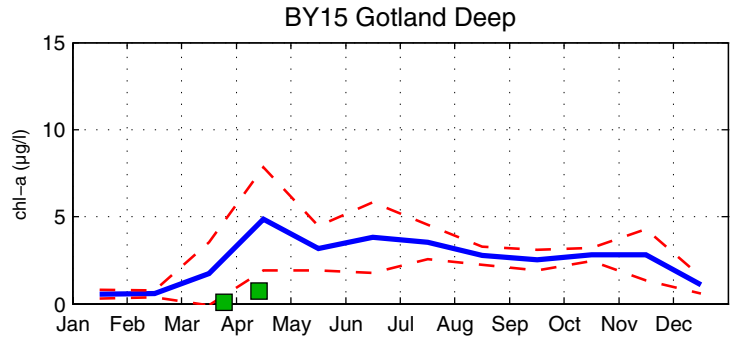
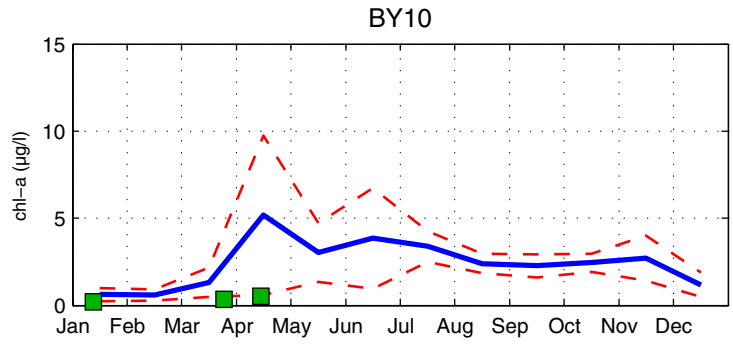
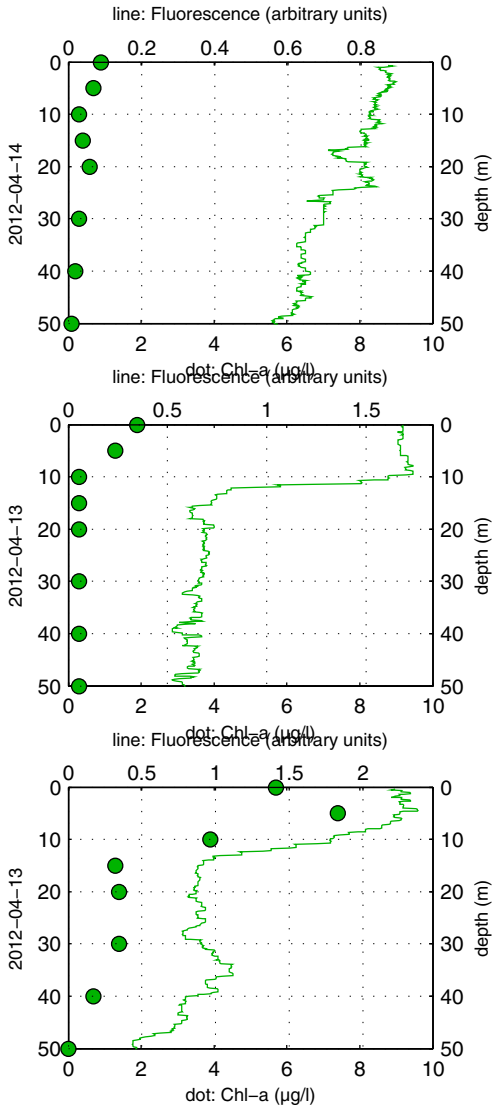


# The Southern Baltic

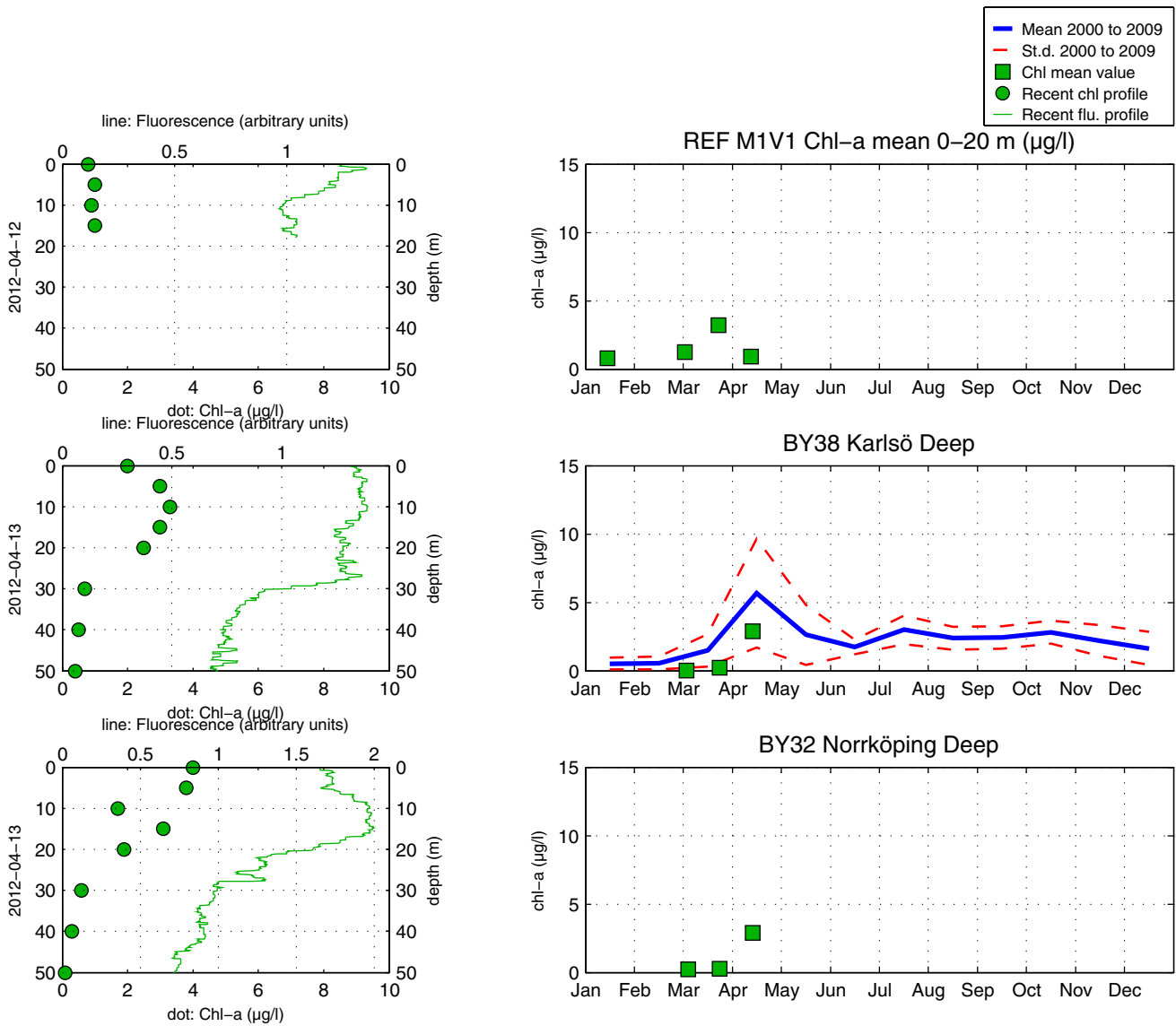




# The Eastern Baltic



# The Western Baltic



## Om klorofylldiagrammen

Klorofyll *a* är ett mått på mängden växtplankton. Prover tas från ett antal djup. Data presenteras både från de fasta djupen och som medelvärden 0-20 m. Utöver resultaten från laboratorieanalyserna av vattenprover mäts klorofyll *a* som fluorescens från ett automatiskt instrument som sänks ned från fartyget. På så sätt kan djupt liggande, ibland, tunna lager av växtplankton observeras.

## About the chlorophyll graphs

Chlorophyll *a* is sampled from several depths. Data is presented both from the discrete depths and as an average 0-20 m. In addition to the laboratory analysis from the water samples chlorophyll fluorescence is measured in continuous depth profiles from the ship. This is a way to observe thin layers of phytoplankton occurring below the surface.

## Om AlgAware

SMHI genomför ca en gång per månad expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopisk analys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHI:s satellitövervakning av algbloomningar finns på [www.smhi.se](http://www.smhi.se).

## About AlgAware

The SMHI carries out monthly cruises in the Baltic and the Kattegat/Skagerrak. Results from semi quantitative microscopic analysis of phytoplankton samples as well as chlorophyll measurements are presented in brief in this report. Information from SMHI:s satellite monitoring of algal blooms is found on [www.smhi.se](http://www.smhi.se).

Art / Species	Gift / Toxin	Eventuella symptom	Clinical symptoms
<i>Alexandrium</i> spp.	Paralytic shellfish poisoning (PSP)	<b>Milda symptom:</b> Inom 30 min.: Stickningar eller en känsla av bedövning runt läpparna, som sprids gradvis till ansiktet och nacken; stickningar i fingertoppar och tår; Huvudvärk; yrsel, illamående, kräkningar, diarré <b>Extrema symptom:</b> Muskelförlamning; andningssvårigheter; känsla av att kvävas; Man kan vara död inom 2-24 timmar efter att ha fått i sig giftet, på grund av att andningsmuskulaturen förlamas.	<b>Mild case:</b> Within 30 min: tingling sensation or numbness around lips, gradually spreading to face and neck; prickly sensation in fingertips and toes; headache, dizziness, nausea, vomiting, diarrhoea. <b>Extreme case</b> Muscular paralysis; pronounced respiratory difficulty; choking sensation; death through respiratory paralysis may occur within 2-24 hours after ingestion.
<i>Dinophysis</i> spp.	Diarrhetic shellfish poisoning (DSP)	<b>Milda symptom:</b> Efter cirka 30 minuter till några timmar: yrsel, illamående, kräkningar, diarré, magont <b>Extrema symptom:</b> Upprepad exponering kan orsaka cancer	<b>Mild case:</b> Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain. <b>Extreme case:</b> Repeated exposure may cause cancer.
<i>Pseudo-nitzschia</i> spp.	Amnesic shellfish poisoning (ASP)	<b>Milda symptom:</b> Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramp <b>Extrema symptom:</b> Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramper	<b>Mild case:</b> Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. <b>Extreme case:</b> dizziness, hallucinations, confusion, loss of memory, cramps.
<i>Chaetoceros concavicornis</i> / <i>C. convolutus</i>	Mechanical damage through hooks on setae	<b>Låg celltäthet:</b> Ingen påverkan. <b>Hög celltäthet:</b> Fiskens gälar skadas, fisken dör.	<b>Low cell numbers:</b> No effect on fish. <b>High cell numbers:</b> Fish death due to gill damage.
<i>Pseudochattonella</i> spp.	Fish toxin	<b>Låg celltäthet:</b> Ingen påverkan. <b>Hög celltäthet:</b> Fiskens gälar skadas, fisken dör.	<b>Low cell numbers:</b> No effect on fish. <b>High cell numbers:</b> Fish death due to gill damage.

Översikt över några potentiellt skadliga alger och det aktuella giftets effekt. Overview of potentially harmful algae and effects of toxins. Manual on harmful marine microalgae (2003 - UNESCO Publishing).

Kartan på framsidan visar viktat medelvärde för klorofyll *a*, µg/l (0-20 m) vid de olika stationerna. Förekomst av skadliga alger vid stationer där arter analyseras markeras med symbol.

The map on the front page shows weighted mean of chlorophyll *a*, µg/l (0-20 m) at sampling stations. Presence of harmful algae at stations where species analysis is performed is shown with a symbol.

